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ABSTRACT

An instrument was developed to measure the quality of program planning procedures normally used by business organizations to plan formal training programs for managers and supervisors. Called the Index of Program Planning, it was developed using procedures which integrate program planning models and recommended planning behaviors within business settings. Sixty-nine experts in program planning or industrial training participated in exercises to select the behaviors and to judge the relative weights of importance for each. The final instrument consists of twenty-six statements of planning behavior and an associated weight of importance for each. In addition to providing an overall score which indicates the level of quality for program development in individual organizations, the index provides sub-scores for different segments of the planning process. Overall scores may be used by researchers wanting to compare quality of planning among organizations or test theoretical levels among quality of planning and other variables; sub-scores may be used diagnostically by organizations to improve their planning. The index was tested on a sample of twenty-three large corporations. A reliability coefficient of +0.85 was estimated for the index using data from the testing procedures. The method for designing the instrument is generalizable to a variety of adult education settings where similar instruments may be useful. (Statements of planning behavior utilized in the development of the instrument and the instrument itself are appended.) (Author/DTT)

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MEASURING THE QUALITY OF PROGRAM PLANNING

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MEASURING THE QUALITY OF PROGRAM PLANNING

ABSTRACT

Do better program planning procedures create better programs? Empirical evidence regarding that question awaits the development of techniques to measure the quality of programs and of program planning procedures. This paper reports the development of an instrument which is designed to measure the quality of program planning procedures normally used by business organizations to plan formal training programs for managers and supervisors.

The Index of Program Planning was developed using procedures which integrate program planning models and recommended planning behaviours within business settings. A series of structured exercises incorporating fifty-six planning behaviours was designed to select a list of planning behaviours for the index on the basis of three criteria. Sixty-nine experts in program planning or industrial training participated in the exercises to select the behaviours and to judge the relative weights of importance for each of those behaviours.

The final instrument consists of twenty-six statements of planning behaviour and an associated weight of importance for each behaviour. The degree of excellence for program planning in an organization is calculated by numerically combining the number of different planning activities used from the list of behaviours given, the weighted importance of each behaviour, and the relative degree of use for each behaviour over several planning cycles.

In addition to providing an overall score which indicates the level of quality for program development in individual organizations, the index provides sub-scores for different segments of the planning process. Overall scores may be used by researchers wanting to compare quality of planning among organizations or test theoretical links among quality of planning and other variables; sub-scores may be used diagnostically by organizations to improve their planning.

The index was tested on a sample of twenty-three large corporations. Its validity was assessed by examining a series of hypothesized relationships between quality of planning and a variety of variables within the corporate training systems. In addition, a reliability coefficient of +0.85 was estimated for the index using data from the testing procedures.

The method for designing the instrument is generalizable to a variety of adult education settings where similar instruments may be useful, and this paper focuses upon the developmental procedures rather than the product which was created.

Adult educators spend considerable time planning workshops, seminars, and other educational events. Despite the importance of program planning activities in the adult educator's role, however, little has been done to measure how well the function is performed. The purpose of the research project reported here was to develop an instrument for measuring the quality of program planning procedures used by business organizations in designing formal training programs for managers and supervisors.

Relatively few approaches have been reported for judging the quality of program planning. Powers reported a project in which an ideal approach to planning was formulated in committee, standards for ideal performance were set, and rating scales were developed to measure discrepancies between the ideal and observed activities conducted within the Iowa Cooperative Extension Service (7). Darter developed ten principles for program planning and tested them by comparing planning procedures of successful and unsuccessful agricultural extension programs (3). Typically, when assessments of planning procedures have been reported, the criteria for excellence have been general principles which may be applied to many agencies, or an ideal planning approach which applies to a single agency. The measurement scales used have been designed to reflect general impressions, and have been imprecise.

This research attempted to improve upon previous practices in several ways. The measurement instrument was intended for use in more than one organization, but at the same time specific planning behaviours rather than general principles were used as criteria. Behaviours were rated objectively, rather than as subjective impressions. In calculating the quality of planning, greater degrees of numerical precision were desired than those which had been previously used. Furthermore, the numerical calculation for quality of planning incorporated the principle that different approaches to planning were possibly of equal quality, though perhaps for different reasons.

The development of a measurement instrument to meet those specifications occured in a sequence of phases. The first step was to design a suitable program planning model. Major parts of the model were then illustrated by specific planning behaviours. Panels of judges were selected to assess the appropriateness of the practical illustrations

and to judge the relative importance of each specific planning behaviour. Using the information provided by judges, a final set of planning behaviours was chosen for the Index of Program Planning. The index was then tested for reliability and validity using a sample of twenty-three companies.

DESIGNING THE PROGRAM PLANNING MODEL

To measure the quality of program planning, a model was required which accurately represented the planning process used by many different corporate training departments. The search for a suitable model was undertaken in the general program planning literature in adult education as well as the more specific literature about training in industry. Over several months various models were examined for their relevance to the problem, and classified into four major groupings. The general characteristics of each group were important in assessing the potential use of the models for the research project.

The first group included Linear Models, which represent planning in a stepwise fashion as though it proceeded through a series of steps in which one step is completed before the next begins. Typical examples are provided by Renton (8) and Rose (9). In visual form these models may be identified by a single line of arrows moving in one direction from one step to the next through the set of steps to be completed. Linear Models were not considered appropriate for this study because they are not an accurate representation of the planning process. In reality, program planning was considered to exhibit greater flexibility in moving simultaneously among different phases of planning in a non-linear manner.

A second group of models was labelled Process-Flow Models, as they represent planning by a series of directional arrows in a manner similar to critical path charts. Visually, the models suggest that planning moves forward on several tasks at the same time, and that there is a general flow of activities where any one task depends on other tasks being completed. The planning tasks identified in those models are usually more specific than the steps listed in linear models. Examples may be found in Turner (11) and Tracey (10). Process-Flow Models were not considered appropriate because a general process-flow could not be designed which was valid for several different organizations. Each training organization appears to exhibit some unique aspects in the order of planning activities, so a

single process-flow diagram could not represent the ordering of activities in all organizations.

A third group of models included the Systems Approach Models which represent planning as a series of input-output phases. In the systems approach, each activity affects, and is affected by every other activity. Typical examples may be found in Miller (6) and Annett (1). Visually, the models are often drawn as intersecting circles with arrows to indicate that planning moves forward as well as backward. Decisions once made are changed when they do not integrate well with other decisions made further along in the planning process. Systems Approach Models are an accurate representation of the planning process as it occurs in reality, but the problems of measuring the process were considered to be too difficult.

After assessing the characteristics of planning models represented by the three major groups, a planning model of a different nature was designed and labelled as a Functional Approach Model. Visually, the model resembles a Linear Model, but without the directional arrows. Its assumptions are that there are some major functions to be completed in program planning, but that the order or the manner in which they are completed may differ from one program to another. In this type of model the visual simplicity of Linear Models is maintained, yet a variety of Process-Flow patterns or Systems Approach procedures may be represented. The Functional Approach Model was developed from basic ideas presented by McNary (5) and by Boone, Dolan, and Shearon (2).

Once the format for a model of program planning was selected, steps were taken to design a specific model for use in settings of business and industrial training. A search of the training literature suggested that a general model of planning would be comprised of four basic functions: 1. Assess Needs 2. Design Program 3. Implement Program 4. Evaluate Program. Twenty-seven models for program planning in corporate training were examined, and a majority of those models included the four basic functions. In addition to those functions, others were mentioned among the different models. Three further functions were selected for the model to be used in this research project: Corporate Planning, Gaining Program Support, and Maintaining Behaviour Following the Program. Each of those functions was mentioned by at least five of the models examined, although

their inclusion in the research model was related more to the persuasive logic of authors who discussed their importance rather than the number of planning models in which they were mentioned.

As may be seen in Figure 1, the resultant Conceptual Schema of Functions for Program Planning consists of seven major functions: 1. Corporate Analysis and Manpower Planning 2. Determining and Assessing Training Needs 3. Designing the Training Program 4. Legitimization 5. Instructional Support 6. Evaluation 7. Maintenance of Behaviour. The model separates the program planning functions from those of providing instruction during the program. A distinction between the process of program planning and that of instruction is illustrated in Figure 2. In this figure the components of program planning and implementation are illustrated with reference to a time frame noted at the bottom of the diagram. The duration of the program coincides with the management of instruction component, in which the instruction is provided to learners. The remaining components illustrated in the diagram comprise the elements of planning and implementation required to provide and support the program of instruction. With reference to the time frame it may be seen that administration and evaluation are ongoing components throughout the planning, implementation, and follow-up phases of a program. Needs assessment occurs early in the process. Program design and design of instruction are interrelated tasks which are necessary in program development, although they may be undertaken by separate individuals. While instruction is underway, instructional support tasks are required from program planners, and at the conclusion of instruction the tasks of following-up to transfer and maintain behaviour on the job are required. There is a direct relationship between the Conceptual Schema of Functions for Program Planning (Figure 1) and the components of program planning and implementation (Figure 2). Corporate Analysis and Manpower Planning as well as Determining and Assessing Training Needs relate to the needs assessment component. Designing the Training Program includes both the program design and design of instruction components. Legitimization is an example of behaviours within the administration component. The remaining three functions, Instructional Support, Evaluation, and Maintenance of Behaviour, all relate to their obvious counterparts in the diagram of program planning components. The

CONCEPTUAL SCHEMA OF FUNCTIONS FOR PROGRAM PLANNING

1. CORPORATE ANALYSIS AND MANPOWER PLANNING

   A study of company objectives, plans, and structure and of the company's relationship to changes in society for the purpose of estimating how the company might change and what kinds of personnel might be required for the company to succeed in the future.

2. DETERMINING AND ASSESSING TRAINING NEEDS

   A study of company operations and company personnel for the purpose of determining where problems exist at present or will likely exist in the future, and an assessment of the potential roles of training in helping to overcome those problems.

3. DESIGNING THE TRAINING PROGRAM

   Planning and designing a sequence of instructional activities to achieve the desired training goals and then producing necessary program materials and making preparations for the implementation of the program within the company.

4. LEGITIMIZATION

   Gaining the approval of company management for the training program, including management agreement that the program is financially worthwhile, that the content of the program is acceptable, and that the procedures for conducting the program are within company regulations.

5. INSTRUCTIONAL SUPPORT

   The provision of services and personnel to facilitate the instructional process as the training program is underway.

6. EVALUATION

   The assessment of the training program in terms of the effectiveness of the training system which produced it, or in terms of the achievements of the participants, or in terms of resultant effects of the program on the company as a whole.

7. MAINTENANCE OF BEHAVIOUR

   Attempting to ensure that behaviours learned in the training program are carried over into the work situation.

Figure 1. Functional Approach Model for Program Planning

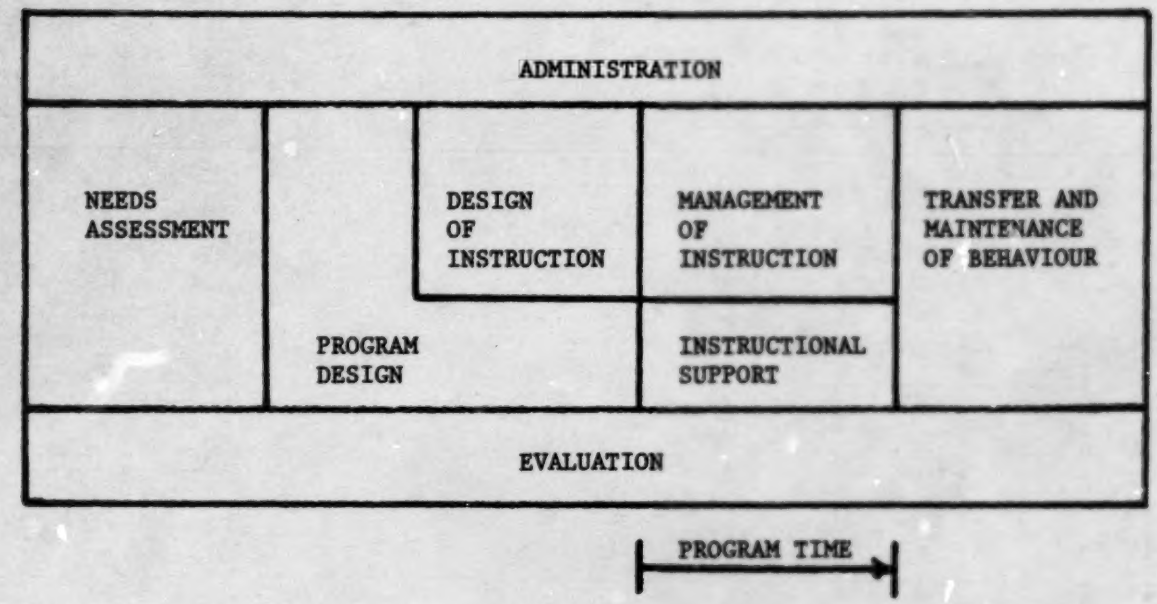

Figure 2. Components of program planning and implementation

correspondence between this diagram of program planning components and the functions of program planning which are represented in the Functional Approach Model serves to illustrate the conceptual foundations of the research project which was conducted.

RELATING THE MODEL TO SPECIFIC PLANNING BEHAVIOURS

When the program planning model was designed, a series of tasks was completed to relate the conceptual model to the concrete realities of planning programs for training within corporate settings. The literature was searched extensively for specific planning activities which illustrated the seven conceptual functions from the planning model. Eight specific behaviours were selected to represent each of the planning functions listed in the model. The fifty-six descriptive statements which were written to reflect those behaviours may be found in Appendix A. The statements of behaviour were intended for inclusion in the measurement instrument, as they represented typical behaviours which might be found among planning activities for business and industrial training. Strategically, the behaviours were intended as reference points which might be observed

objectively to determine if the seven major functions of planning were being undertaken.

Each statement in the measurement instrument was required to meet three criteria: 1. the statement of behaviour is a valid example of the planning function it is intended to represent 2. within the planning process, the function of the stated behaviour is clearly understood 3. there is general agreement with respect to the importance of the stated behaviour in the planning process. To test each of the behaviours with those criteria, three structured exercises were developed for use by panels of judges.

Sixty-nine judges completed one or more structured exercises. Each judge was selected on the basis of holding a training position within industry at the time of the study or in the past, or on the basis of knowledge about the program planning process in adult education. Thirty-two judges were employed in academic institutions, fifteen were training directors in industry, and twenty-two were employed in government agencies or were engaged in industrial consulting work. The judges were located primarily in western Canada. The judges were selected through a network of personal contacts and recommendations as the number of suitable people in Canada is small. Communication and participation in the project were maintained by mail and phone for those judges who were not available for in-person contact.

The first exercise, completed by eighteen judges, was designed to test the validity of each statement as a representative of the appropriate planning function. The exercise consisted of seven sections, one for each of the major planning functions in the model. Within each of the seven sections, the eight statements were listed as representative behaviours of the function. Judges were asked to rate each statement on a five-point scale. If the statement was considered to be an invalid illustration of the planning function it was rated 1. Poor examples were rated 2, adequate examples 3, good examples 4, and excellent examples 5. Any statement which did not receive a median score of 3.25 or more was excluded from the final instrument. The criterion level of 3.25 was arbitrarily chosen to include the better statements classified as adequate, as well as those classified as good or excellent.

The second exercise, completed by sixteen new judges, was designed to test whether the functions of the stated behaviours were clearly understood. In the first exercise the relationship between statements and functions was obvious and the judges had to assess validity. In the second exercise, the judges were asked to match statements with their appropriate functions without prior knowledge about the relationships. Each statement was tested to determine if its purpose in the planning process was so obvious that judges could consistently match it with its intended function. Judges were provided with the name and definition of each of the seven planning functions, and also with a list of the fifty-six statements in random order. Each judge was asked to categorize the fifty-six statements according to the seven functions. Any statement which was not categorized correctly by sixty per cent or more of the judges was withdrawn from further consideration for the instrument. The sixty per cent criterion level was arbitrarily chosen to reflect a majority of three out of five judges.

The objective of the first two exercises was to eliminate any statement which was not considered to be a good example of its relevant function or which lacked clarity with respect to its general purpose in the overall planning procedure. Of the fifty-six statements from the original list, forty-five met the criteria for the first two exercises, and those statements were included in a third exercise.

The third exercise was designed to estimate the importance of each stated behaviour in the program planning process for business and industrial training. Each of fifty-eight judges was provided with a list of the forty-five statements ordered according to function but without identification labels to relate statements with functions. A scale of importance was also provided, with 1 indicating that the statement was of no importance in planning management training programs, and 9 indicating that the behaviour was extremely important. Judges were asked to rate the importance of each behaviour. The criteria for selection of statements from Exercise Three was the degree of agreement among judges with respect to the importance of behaviours. It was possible for judges to agree that importance of any statement was at a point between 1 and 9. Therefore, it was possible to select behaviours of both high and low importance for the instrument.

The analysis of data for Exercise Three was more complicated than the simple calculations required for Exercises One and Two. Judges had not been instructed to consider the nine categories of importance to be of equal width, so that category widths might have been interpreted to be unequal at different positions on the scale by any individual judge. Similarly, different judges might have interpreted the widths in different terms. Considering the possible inequalities of interpretation, the original frequency distributions were considered to be unsuitable for statistical analysis. Using the Method of Successive Intervals, as outlined by Edwards in Techniques of Attitude Scale Construction (4), a common underlying continuum was created and each of the forty-five original distributions was transformed onto it.

The basis for the development of the underlying continuum and the transformations of the original distributions onto it was the cumulative proportion distribution. By assuming that the cumulative proportion distributions were normal for each statement, the statistical properties of the unit-normal curve were used to develop the common underlying continuum. Once the cumulative proportion distributions were known for the original distributions and for the common underlying continuum which was constructed, the median value and the twenty-fifth and seventy-fifth percentiles were transformed from the original to the common underlying continuum for each of the forty-five items. By knowing those three points on the common underlying continuum for each of the statements, the median importance and the degree of agreement among judges were derived.

The analysis of agreement among judges with respect to each statement was based upon the semi-interquartile range, commonly labelled "Q". In the unit-normal curve the value of Q is 1.36, and since that curve was used as the basis for the forty-five transformed distributions, the value of 1.36 was set as the criterion for acceptance or rejection of statements. Any statement which had a value for Q greater than 1.36 exhibited more disagreement among judges than would have been expected had the distributions of opinion been statistically normal. Any statement with a value of 1.36 or less was considered to exhibit sufficient agreement among judges to be included in the final instrument. Of the forty-five statements, twenty-six met the third criteria for the Index of Program Planning.

The relative importance of each statement was represented by its median score on the common underlying continuum. Quality of program planning was calculated using those scores of relative importance, and the Index of Program Planning consists of the twenty-six statements of planning behaviour, each accompanied by its score of relative importance.

THE INDEX OF PROGRAM PLANNING

An Index of Program Planning was developed to measure the standards of quality with respect to program planning procedures for managerial and supervisory training programs in business and industry. The measurement instrument was based upon a program planning model which indicated the presence of seven major functions in the planning process. Representative behaviours were listed for each of the planning functions, and were tested to ensure that any statement included in the instrument met three criteria:
1. the statement is a valid example of the function it represented
2. the function of the behaviour in the planning process is generally agreed
3. the importance of the behaviour in the planning process is generally agreed.

The Index of Program Planning included the twenty-six statements from the original fifty-six which met the three criteria. The instrument may be found in Appendix B. Assumptions of the instrument, in numerically estimating quality of program planning are that better planning is indicated by: 1. the use of more of the seven major functions in the planning model 2. the use of greater number of different behaviours in conducting any particular planning function 3. the use of more important behaviours rather than less important behaviours in conducting any planning function.

Each of the major planning functions is represented in the index, but because the statements were chosen without reference to specific functions, there is variation in the number of statements representing each of the seven functions. Legitimization, Instructional Support, and Evaluation are each represented by five statements, Corporate Analysis and Designing the Training Program are each represented by four statements, Determining Training Needs is represented by two, and Maintenance of Behaviour is represented by only one statement.

USING THE INDEX OF PROGRAM PLANNING

The Index of Program Planning was designed to produce a numerical value representing a cumulative indication of program planning quality exhibited by a company over a period of time. That numerical value is derived by combining the values of importance and the relative percentage of use by a company with respect to each of the twenty-six behaviours. Specifically, the index is used in the following manner: 1. for each of the twenty-six behaviours a company is asked to determine the percentage of possible times the behaviour was used in planning programs over a period of twenty-four months 2. for each of the statements the percentage of use is multiplied by the value of importance for the statement 3. the twenty-six products resulting from the multiplications are added to create a total sum which is the numerical value representing the standard of program planning quality exhibited by the company.

If a company used each of the twenty-six behaviours one hundred per cent of the time when planning programs, the value of 505.3 would be calculated as the highest possible score. If some of the behaviours were used only a portion of the time, a score is calculated in the range of 0 to 505.3, depending upon the specific combination of the relative importance of the behaviours used and the percentage of time each behaviour was included in the planning process. In general, the scores will be greater in direct proportion to a combination of the number of behaviours used, the relatively greater values of importance for the behaviours used, and the relatively greater percentage of time for which the behaviours were used.

The total score provided by the Index of Program Planning has a number of uses. It permits measurements to be derived for program planning across a variety of corporate settings so that quality of program planning might be compared among a variety of industries or among major sectors in an economy. For researchers in adult education, the scores may be used to test relationships between quality of program planning and existence of specific conditions within corporate settings to determine which factors appear to provide a better environment for planning. The relationship between quality of program planning and the quality of programs is also of interest, and might be tested once measures are devised to reflect

program quality. In addition to the total score and its uses in research, a series of sub-scores may be derived from the index for the seven planning functions. Companies wishing to improve their planning practices might use the sub-scores diagnostically to identify problem areas. The strengths and weaknesses within each of the planning areas might be noted to guide improvement in selected areas of the planning process.

TESTING THE INDEX OF PROGRAM PLANNING

A number of analyses were conducted to assess the developmental procedures used in the research project and to estimate the reliability and validity of the index. The first test was related to the data transformations which occured as part of the Method of Successive Intervals within the data analysis for Exercise Three. An assumption required for the procedure is that the distributions of opinion are distributed normally when projected onto the common continuum. A test for that assumption compared the discrepancies between the original empirical distributions and the theoretically derived distributions. The degree of error was determined by reconstructing the original set of data, using only the information available within the common underlying scale and the distributions on it. Edwards reported that an average discrepancy in the range of 2.4 per cent was typical (4:138). The average deviation found in the present study was 3.0 per cent. It was therefore concluded that the assumptions of normality were acceptable and that the data were appropriate for the transformation procedures.

The second analysis was conducted to estimate the possible effects upon the index if a different group of judges had been used in the developmental procedures. The group of judges was separated into two random groups using a toss of the coin. The two groups were then compared with respect to the median values of importance for the forty-five statements. The correlation between the two groups was considered to be an estimate of the correlation which might have existed between the actual group of participating judges and any other group of judges which might have been chosen. The value of this correlation was +0.84, and it was therefore concluded that another set of judges would likely have contributed a similar set of median values of importance for the forty-five statements.

The two groups were also compared with respect to the degree of agreement exhibited toward the importance of statements included in the third exercise. Disagreement among the judges was evident, and the correlation was +0.05. It was therefore concluded that another set of judges might easily have selected another set of statements for the index. Further analysis indicated that one group of judges, by themselves, would have selected twenty-four statements, and the second group would have selected twenty-seven. The two random groups would have selected fourteen statements in common. Those fourteen statements are included in the Index of Program Planning as numbers 2, 4, 7, 8, 9, 10, 12, 13, 14, 17, 18, 22, 23, and 25.

To estimate the reliability and validity of the index, an opportunity was provided for its repeated use in a survey of companies. A panel of one hundred companies from within the greater Vancouver area was selected. From approximately one hundred and fifty companies which employed two hundred people or more a representative panel of one hundred was chosen. Each of those companies was contacted, and fifty-nine interviews were conducted. Of those fifty-nine firms, twenty-three were actively engaged in the local planning and implementation of training programs for managers and supervisors within British Columbia. The disposition of interview requests with the original one hundred companies was as follows:

Companies Interviewed		59
	Companies conducting training	23
	Companies not conducting training	36
Companies Not Interviewed		41
	No longer employed 200 people	9
	Declined to participate	8
	Could not be contacted within four phone calls	7
	Could not arrange convenient interview time	7
	Subsidiary of another firm in the panel	5
	No longer in business in Vancouver	5

For each of the twenty-three companies found to be conducting local training programs, information was collected pertaining to the company in general, to its training system, and to the use of the twenty-six specific planning behaviours. From that information, estimates of reliability and validity were developed for the Index of Program Planning.

The quality of program planning within each of the twenty-three firms was represented by the total score on the Index of Program Planning. The average score attained by the twenty-three companies was 293.1, which was approximately fifty-eight per cent of the possible total of 505.3 points. The scores ranged from 142.7 to 436.3, with three scores below 200 and four scores above 350.

An estimate of internal reliability was derived for the index by calculating a coefficient of internal consistency using an analysis of variance procedure outlined by Winer (12:124). The procedure incorporated the twenty-six item products listed for each of the twenty-three companies to obtain within-companies and between-companies variances. The coefficient of internal consistency for the index was +0.85.

In assessing the index, three types of validity were considered. Face validity was assumed to be satisfactory as a result of the opinions of judges with respect to the importance of individual planning behaviours. Behaviours which were rated consistently high or low by judges were assumed to represent high or low quality of program planning respectively. A collection of such items, weighted with respect to importance, appeared to be valid as an overall measure of quality for a set of program planning procedures.

The requirements for content validity were satisfied by developmental procedures in the project. Representative sampling of program planning procedures was achieved by use of the seven-category program planning model to incorporate a full spectrum of procedures, and by judgements from knowledgeable people with respect to validity and appropriateness of the items related to the seven categories.

The assessment of construct validity required more elaborate analysis. There appeared to be no existing measures of quality for program planning procedures in business and industry. As a result, the construct validity of the index could not be established through correlation with existing constructs or known observables which were assumed to be associated with the quality of program planning. Hypotheses were formulated to test construct validity within a logical framework relating quality of planning to conditions within the companies. Better quality planning was found not to be associated with larger organizations or more extensive training systems.

It appeared that greater provision of staff and funds was not sufficient by itself to ensure better quality program planning. Those companies which placed a degree of emphasis and commitment to their own internal programs, and less on external programs, exhibited a better quality of planning. A favorable environment for the conduct of training programs, training departments staffed with personnel who had received formal training in educational fields and with more years of experience in the company training system, were found to be associated with better planning. The logic of these testing procedures appeared to suggest that the hypothetical construct of quality in program planning was validly measured by the Index of Program Planning.

SUGGESTIONS FOR FURTHER USE OF THE METHODOLOGY

In general, it may be concluded that the methodology which was used for this study was successful in achieving the desired objectives. Similar methods might be used to construct measurement instruments for program planning in other areas of activity. The conceptualization of a functional planning model, selection of statements to illustrate appropriate behaviours with respect to that model, and sequential testing of those statements with respect to a variety of criteria, might be applied to the program planning sequences for a variety of interest areas within adult education.

Further improvements in the methodology may be required in the selection of judges. Greater representation from selected organizations or geographical areas might be achieved by greater control over the selection of judges. Similarly, greater knowledge about the abilities of judges and attempts to balance areas of expertise among groups of judges might be desirable. The judgement procedure itself for each of the three exercises might be improved by incorporating additional techniques for achieving group concensus more effectively. The Delphi Technique and Nominal Group procedure are possibilities to improve the judging process.

The unequal distribution of statements among the seven planning functions is not desirable. An estimate of quality for planning in any functional area is unreliable when only one behaviour is tested. Additional steps in the methodology to ensure that more than one item appears for each of the planning functions might increase the validity of the index.

At a time when there is a lack of research tools with respect to program planning, and when the need for guidance and help for more adequate planning procedures is apparent in many areas of adult education, it may be concluded that the present research study has contributed to both practical and theoretical areas of interest. In the area of practice, a measurement tool has been provided to trainers in business and industry. The index has potential uses for evaluating planning procedures and for locating points of weakness in the planning processes used by industrial trainers. In areas of theory, a methodology has been designed and tested for measuring quality of program planning. The ability to measure quality of planning will provide a means for testing theoretical formulations linking those measures with others. Efforts to build theory pertaining to the processes in adult education have been aided by the development of methodology for measuring the quality of program planning.

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APPENDIX A

STATEMENTS OF PLANNING BEHAVIOUR

CORPORATE ANALYSIS AND MANPOWER PLANNING

1. The overall objectives of the company are indicated in a written document which is kept up-to-date and which is available to employees who are responsible for planning training programs.

(Exercise 1)	(Exercise 2)	(Exercise 3 "Q")	(Exercise 3 "Median")
4.50	81.3%	1.69	2.87

2. The company is engaged in planning projects designed to estimate future company manpower requirements.

3.67	93.8	1.42	2.10

3. The company attempts in some formal manner to coordinate all hiring, training, and promotions with studies of future manpower requirements.

3.67	100.0	1.18	1.94

4. The company is engaged in projects designed to study and speculate on future roles and responsibilities of its employees.

3.30	87.5	1.04	1.68

5. A list of retirement dates of managers and supervisors is maintained up-to-date by the company as part of its manpower planning operations.

3.25	93.8	1.42	1.37

6. The company establishes plans for 5 to 10 years in the future and those plans are made known to employees who are responsible for planning training programs.

4.00	87.5	1.36	2.00

7. The company employs at least one person whose primary function is to study future developments in society and to report on their significance for the company.

2.30	100.0

8. The company is engaged in planning projects designed to speculate, study, or recommend potential organizational changes or developments.

3.67	100.0	1.23	1.53

DETERMINING AND ASSESSING TRAINING NEEDS

9. A study was performed of employee morale, effectiveness of communication, climate for innovation, degree of internal conflict, or degree of commitment to corporate objectives within the company for the purpose of determining if training was necessary.

2.50	75.0

10. The work records of managers and supervisors or their subordinates were analyzed for such indicators as waste materials, rejects, re-runs, safety, sales, or other measures of job performance to determine if training was necessary.

3.25	93.8	1.08	1.85

11. The personnel records of managers and supervisors or their subordinates were analyzed for such indicators as absenteeism, lateness, turnover, grievances, demotions, or requests for transfer for the purpose of determining if training was necessary.
    3.38 93.8 1.27 1.36

12. Company managers and supervisors were asked for their opinions as to the needs for training in the company.
    3.39 93.8 1.44 2.39

13. An up-to-date inventory of the knowledge, skills, attitudes, or interests of employees was used to determine if training was necessary.
    4.17 100.0 1.45 1.92

14. A job analysis and/or task analysis was performed to determine the necessary knowledge, attitudes, or skills required for managerial or supervisory jobs within the company.
    4.13 62.5 1.46 2.34

15. When problems were located in company operations a study was performed to assess the likely effects of training as a potential action to solve the problems.
    3.83 93.8 1.41 1.91

16. The on-the-job performance of managers and supervisors was rated or judged to determine if training was necessary.
    3.17 93.8

DESIGNING THE TRAINING PROGRAM

17. The instructional situation was designed to simulate actual working conditions as much as possible so that behaviours learned in the program could easily be transferred to the work situation.
    4.50 87.5 1.19 2.44

18. All instructional materials which were necessary for the program were designed before the program was formally begun.
    3.50 87.5 1.63 1.72

19. The program instructor was active in helping to design the sequence of instructional events.
    4.07 93.8 1.25 2.42

20. The program was designed specifically for a group of employees whose working situation and training needs were known to the program designers.
    4.50 87.5 1.08 2.58

21. The objectives of the training program were stated in behavioural terms which indicated the appropriate behaviour to be learned, the standards of performance to be met, and the conditions under which the performance was to take place.
    5.00 56.3

22. Information was gathered to determine when participants were relatively free from heavy work pressures and the timetable for the training program was developed on the basis of that information.
3.50 81.3 1.38 1.96

23. Lesson plans or meeting procedures were put through pilot tests and were revised wherever necessary before the program was formally begun.
3.50 75.0 1.21 1.59

24. The instruments and devices for the assessment of the program and its participants were designed before the program was formally begun.
3.70 18.8

LEGITIMIZATION

25. A series of cost/benefit studies of alternative approaches to the training program was used to convince management of the efficient use of funds by the proposed training programs.
4.25 87.5 1.28 1.41

26. Approval for the program was facilitated by giving management an opportunity at different points in the planning process to suggest changes which would bring the program more into line with company objectives and expectations.
3.83 62.5 1.43 2.12

27. A separate budget for the training program was exhibited for management approval.
3.79 87.5 1.50 2.00

28. Short preview programs were provided for the approval of top management before the full scale program was begun.
3.30 81.3 1.25 1.42

29. Management demands for cost controls were partly met by calculating both a variable and a fixed cost component for the training program.
3.50 87.5 1.16 1.37

30. A formal presentation of the program proposal was offered to management in which the values of the training for the company were clearly outlined.
4.50 81.3 1.41 2.24

31. A return on investment was calculated for the program in order to convince management that the program was of value to the company.
3.70 75.0 1.29 1.23

32. To facilitate program approval, management was asked to participate in the development of the program.
4.17 75.0 1.27 1.97

INSTRUCTIONAL SUPPORT

33. When specific resource people from within the company were requested for the training program by the instructor the company attempted to obtain them and make arrangements for their release from other duties.
4.50 81.3 1.28 2.23

34. Adequate reference materials relating to the program of instruction were available in sufficient quantities for all participants.
5.00 56.3

35. The instructor was provided with sufficient secretarial assistance to meet his requirements before, during, and after the instructional phase of the training program.
4.50 87.5 1.18 1.83

36. All necessary audio-visual equipment needed for the program was provided by the company either through rental or ownership.
5.00 75.0 1.20 2.20

37. The training program was conducted in an area which was specifically allocated to the program by the company, and in which no other company activities were allowed to intrude during the conduct of the program.
5.00 87.5 1.35 2.71

38. Any special arrangements for food services at coffee breaks, luncheon meetings, or dinner meetings were handled by company employees other than the instructor.
3.10 93.8

39. Any necessary arrangements or bookkeeping details for field trips, special meetings, conferences, etc. were handled by company employees other than the instructor, leaving the instructor free of such problems.
3.25 93.8 1.45 1.47

40. At least one member of the planning group for the program assisted the instructor throughout the instructional phase in making any necessary adjustments in the training program.
3.94 81.3 1.16 1.65

EVALUATION

41. Participants were evaluated at several stages in the program to determine their progress toward achieving course objectives.
3.93 81.3 1.22 2.17

42. The instructional ability of the instructor or group leader was formally evaluated on the basis of his performance during the program.
3.50 87.5 1.57 2.18

43. The objectives of the program were used as a basis from which to evaluate the learning and achievements of the participants.
4.50 100.0 1.17 2.69

44. Before and after measures were made among the participants and among a similar group of employees not being trained with respect to objectives of the program for the purpose of determining the effects of the program.
5.00 100.0 1.11 1.94

45. The on-the-job behaviour of participants was observed or measured both before and after the program to evaluate the effects of the training program.
5.00 93.8 1.19 2.44

46. Participants were tested before the program was formally begun to determine their starting levels of knowledge, skills, or attitudes which were relevant to the course objectives, so that the effects of the program could be evaluated more readily.
3.83 68.8 1.41 1.93

47. The planning procedures which were used to develop the program were evaluated to determine if improvements could have been made in the planning processes.
3.83 68.8 1.05 1.87

48. A systematic schedule of evaluations was planned for use at intervals after the program was completed as a means of checking on the retention levels of newly-learned behaviours over periods of time.
3.93 31.3

MAINTENANCE OF BEHAVIOUR

49. Short refresher programs were provided for participants at intervals after the original program was completed.
3.50 93.3 1.26 2.01

50. The superior of each participant was requested to attend a short informative program which outlined the behaviours to be learned by program participants, so that the superior was aware of what to expect from his subordinate on-the-job.
4.17 68.8 1.58 2.49

51. Some form of personal counseling was provided for participants who experienced difficulty in transferring the training behaviours to the job setting after the program was completed.
4.00 93.8 1.45 2.34

52. The superior of each participant was requested to positively reinforce the newly-learned behaviour on-the-job.
3.79 93.8 1.38 2.54

53. Top management issued instructions that behaviours learned in the training program were expected to be used on-the-job after the completion of the program.
2.10 62.5

54. The environment within which the participants worked was analyzed to determine if the newly-learned behaviours would be encouraged and supported so that those behaviours would continue to be used on-the-job.
3.50 50.0

55. Participants who had problems in implementing the newly-learned behaviours on-the-job were provided with special additional training sessions.
3.90 87.5 1.44 1.95

56. The superior of each program participant was requested to submit a report to either the training specialist or to top management outlining the extent to which the newly-learned behaviours were used on-the-job by the participant after the completion of the program.
3.70 56.3

NOTE: Statements with rating of less than 3.25 in Exercise One, or percentages of less than 60 in Exercise Two were not included in Exercise Three. In these statements they may be noted as having only two scores reported, as the two scores from Exercise Three are not possible.

APPENDIX B

THE INDEX OF PROGRAM PLANNING

STATEMENT OF BEHAVIOUR	MEDIAN[1] IMPORTANCE	PER CENT USAGE	PRODUCT
1. The company attempts in some formal manner to coordinate all hiring, training, and promotions with studies of future manpower requirements.	19.4	____	____
2. The company is engaged in projects designed to study and speculate on future roles and responsibilities of its employees.	16.8	____	____
3. The company establishes plans for 5 to 10 years in the future and those plans are made known to employees who are responsible for planning training programs.	20.0	____	____
4. The company is engaged in planning projects designed to speculate, study, or recommend potential organizational changes or developments.	15.3	____	____
5. The work records of managers and supervisors or their subordinates were analyzed for such indicators as waste materials, rejects, re-runs, safety, sales, or other measures of job performance to determine if training was necessary.	18.5	____	____
6. The personnel records of managers and supervisors or their subordinates were analyzed for such indicators as lateness, absenteeism, turnover, grievances, demotions, or requests for transfer for the purpose of determining if training was necessary.	13.6	____	____
7. The instructional situation was designed to simulate actual working conditions as much as possible so that behaviours learned in the program could easily be transferred to the work situation.	24.4	____	____
8. The program instructor was active in helping to design the sequence of instructional events.	24.2	____	____
9. The program was designed specifically for a group of employees whose working situation and training needs were known to the program designers.	25.8	____	____

1. Median values of importance are the median values from Exercise Three multiplied by a factor of ten.

10. Lesson plans or meeting procedures were put through pilot tests and were revised wherever necessary before the program was formally begun.	15.9	____	____
11. A series of cost/benefit studies of alternative approaches to the training program was used to convince management of the efficient use of funds by the proposed training program.	14.1	____	____
12. Short preview programs were provided for the approval of top management before the full scale program was begun.	14.2	____	____
13. Management demands for cost controls were partly met by calculating both a variable and a fixed cost component for the training program.	13.7		
14. A return on investment was calculated for the program in order to convince management that the program was of value to the company.	12.3	____	____
15. To facilitate program approval, management was asked to participate in the development of the program.	19.7	____	____
16. When specific resource people from within the company were requested for the training program by the instructor the company attempted to obtain them and make arrangements for their release from other duties.	22.3	____	____
17. The instructor was provided with sufficient secretarial assistance to meet his requirements before, during, and after the instructional phase of the training program.	18.3	____	____
18. All necessary audio-visual equipment needed for the program was provided by the company either through rental or ownership.	22.0	____	____
19. The training program was conducted in an area which was specifically allocated to the program by the company, and in which no other company activities were allowed to intrude during the conduct of the program.	27.1	____	____
20. At least one member of the planning group for the program assisted the instructor throughout the instructional phase in making necessary adjustments in the training program.	16.5	____	____

21. Participants were evaluated at several stages in the program to determine their progress toward achieving course objectives.	21.7	____	____
22. The objectives of the program were used as a basis from which to evaluate the learning and achievements of the participants.	26.9	____	____
23. Before and after measures were made among the participants and among a similar group of employees not being trained with respect to objectives of the program for the purpose of determining the effects of the program.	19.4	____	____
24. The on-the-job behaviour of participants was observed or measured both before and after the program to evaluate the effects of the training program.	24.4	____	____
25. The planning procedures which were used to develop the program were evaluated to determine if improvements could have been made in the planning processes.	18.7	____	____
26. Short refresher programs were provided for participants at intervals after the original program was completed.	20.1	____	____

TOTAL SCORE